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REPORT
98-458

LAND REMOTE-SENSING COMMERCIALIZATION ACT

MAY 17 (legislative day, MAY 14), 1984.—Ordered to be printed

Mr. PACKWOOD, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

[To accompany H.R. 5155]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (H.R. 5155) to establish a system to promote the use of land remote-sensing satellite data, and for other purposes, having considered the same, reports favorably thereon with an amendment in the nature of a substitute and recommends that the bill do pass.

PURPOSE OF THE BILL

The purpose of the bill is to provide a framework for a phased, orderly commercialization of land remote sensing technologies. The commercialization framework includes provisions for appropriate Government regulation of private land remote sensing, continued Federal research and development in remote sensing, and continued Government archiving of land remote sensing data.

BACKGROUND AND NEEDS

The Federal Government's civilian land remote sensing satellite system is called Landsat. The Landsat system, developed by the National Aeronautics and Space Administration (NASA), has been in operation since 1972. NASA operated Landsat as an experimental statellite system until 1979, when responsibility for system operation was transferred to the National Oceanic and Atmospheric Administration (NOAA). To date, five satellites have been launched in the Landsat series. The fifth satellite, Landsat 5, was launched on March 1, 1984, and is expected to function until 1987. Landsat 5, the last Government-owned land remote sensing satellite scheduled

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for launch, was launched more than a year ahead of schedule because of the premature failure of Landsat 4.

Landsat orbits the earth at an altitude of 705 kilometers and generates worldwide data that can be processed to reveal details of the earth's surface. The Landsat orbit is a 16-day cycle, meaning that the satellites pass over a particular point on the earth's surface very 16 days.

All five Landsats have been equipped with Multispectral Scanner (MSS), which has a spatial resolution of 80 meters and covers four spectral bands. Landsat 4 and Landsat 5 also carry the more advanced Thematic Mapper (TM), which has 30 meter spatial resolution and provides data in seven spectral bands.

Landsat data have been processed into forms useful for many applications. The data is used to observe renewable resources, including crop classification, monitoring, and forecasting, as well as forestry management. Nonrenewable resource applications of Landsat data include oil and mineral exploration and hydrological applications. The data are also used for land-use planning, cartography, and environmental observation and monitoring.

The Landsat system was developed by NASA as an experimental program, and although the program was a technical success, no long-range plans were made to convert it to more user-sensitive, operational system. The lack of government commitment to long-range plans suppressed the Landsat data market. In fact, current data sales do not come close to meeting procurement and operation costs. Nevertheless, despite the lack of Government marketing, by the late 1970's it had become clear to some observers that land remote sensing data could eventually have sufficent commercial value to attract private investment.

The first clear policy statement of Landsat commercialization was made by the Carter administration in 1979. President Carter cited commercialization of Landsat as a goal of his administration and committed the United States to provide continuity of data flow from the Landsat system at least through the 1980's.

The Reagan administration decided early in its tenure to accelerate the process of transferring Landsat to the private sector. In 1981, President Reagan asked his Cabinet Council on Commerce and Trade to evaluate the prospects for private remote sensing. Concurrently, the administration abandoned plans to construct Landsats 6 and 7 to follow Landsat. 5.

On September 3, 1982, the Department of Commerce issued a Request for Information (RFI) for comment by prospective private operators of Landsat and the Government's meteorological satellite (Metsat) systems. The Department received fourteen responses to the RFI. The Cabinet Council on Commerce and Trade subsequently recommended to the President that commercialization of both Landsat and Metsat be pursued.

The President announced his intent to commercialize Landsat and Metsat on March 8, 1983. The Congress responded by including a provision in the fiscal year 1984 NASA authorization (Public Law 98–52) stating that the administration could not transfer Landsat or Metsat to the private sector without prior approval from the Congress.

In May 1983, the administration created a Source Evaluation Board (SEB) for Civil Space Remote Sensing within the Department of Commerce to solicit and evaluate proposals from private parties interested in acquiring and operating Landsat and Metsat. The SEB issued a draft Request for Proposals (RFP) for industry comment. The draft RFP pertained to both the Landsat and Metsat systems.

At the same time, the Commerce Committee and the Senate unanimously passed a concurrent resolution expressing opposition to Metsat commercialization. In reviewing the legislation, Committee members agreed that the national security concerns and international obligations relating to weather information could not be satisfied by private Metsat operation. The Committee felt that these concerns were not as critical with Landsat and that Landsat commercialization should be given further consideration. The House passed an identical resolution.

The fiscal year 1984 Appropriations Act for the Department of Commerce (Public Law 98-166) contained a provision precluding the use of any funds to pursue Metsat commercialization. The administration withdrew the Metsat commercialization proposal upon the enactment of Public Law 98-166 in November 1983.

On January 3, 1984, the SEB subsequently issued a RFP for the Landsat system only. The RFP required respondents to bid for development of a follow-on system to Landsat, and permitted bids for the operation or acquisition of the existing system. Seven bids were received in response to the RFP. By June 1984, the SEB will recommend to the Secretary of Commerce what bid(s), if any, should be accepted. The Department of Commerce will then seek to contract for development of a follow-on system and for the operation of Landsat and marketing of Landsat data.

Pursuant to Public Law 98-52, the Department can neither enter into a contract to construct further Landsats nor contract for a private land remote sensing capability, such as a follow-on system to Landsat 5, without enabling legislation. The Committee feels strongly that a continuous U.S. land remote sensing capability can be provided only by enactment of legislation during this session of Congress and strongly endorses H.R. 5155, as reported.

The Committee recognizes that private remote sensing ventures cannot profit until markets for data expand. Further, the Committee feels that data markets will not expand until the private sector aggressively markets data products. The Committee concludes, therefore, that a phased commercialization process, including the private marketing of data, is needed to transfer Landsat successfully to the private sector.

Any commercialization of space activities raises issues for which policy must be determined. Issues relating to Landsat commercialization include data continuity, foreign competition, nondiscriminatory access to data, national security, international policy, appropriate regulation of private remote sensing activities, determination of the long term Federal role in remote sensing research and development and data archiving.

Having reviewed these issues, the status of the Government's Landsat system, and the prospects for land remote sensing com-

mercialization, the Committee supports enactment of land remote sensing commercialization legislation.

Legislative History

Senator Gorton, the chairman of the Science, Technology, and Space Subcommittee, introduced S. 2292 on February 9, 1984. The bill is cosponsored by Senators Goldwater and Kasten.

Two other bills relating to Landsat have been introduced and referred to the Committee during the 98th Congress. The bills are S. 1855, introduced by Senator Hollings and cosponsored by Senators Ford and Riegle, and S. 1861, introduced by Senator Pressler.

The Subcommittee on Science, Technology, and Space held a hearing on Landsat commercialization on March 22, 1984. Witnesses at the hearing included representatives of the Federal Government, the Office of Technology Assessment, and a diverse group of private firms and associations interested in land remote sensing.

On April 9, 1984, the House of Representatives passed H.R. 5155, a bill similar to S. 2292. H.R. 5155 was subsequently referred to the Committee. On May 8, 1984, the Committee, without objection, ordered H.R. 5155 reported with an amendment in the nature of a substitute. The language of the substitute reported by the Committee is that of S. 2292 with a number of amendments agreed to by the Committee.

Summary of Major Provisions

The bill, as reported, provides for a phased commercialization of land remote sensing and appropriate Federal regulation, research and development, and archiving of data.

Title I of the bill contains findings, purposes, and definitions.

Title II represents the first phase of the commercialization process. The Secretary of Commerce is directed to contract for private marketing of data from the Landsat system. The Secretary also may contract for private operation of the system, but may not transfer ownership of Landsat to the private sector. Title II is intended to expand markets for land remote sensing data through an aggressive private marketing effort.

Title III of the bill provides for a second phase of commercialization, a 6-year transition to commercial land remote sensing. The Secretary of Commerce is directed to contract for private development, operation, and ownership of a follow-on system to Landsat. Title III requires that the contract be awarded by means of a competitive process, and establishes specific criteria, not in order of priority, for the Secretary to consider in evaluating proposals. The contract may provide for Federal financial support including loans, loan guarantees, and other creative financing mechanisms to assure timely provision of the capability. No Federal data purchases will be guaranteed. The premise of Title III is that the private sector can develop a system that is less expensive and more market-driven than a Government system and that such a system will result in net cost savings to the Government.

Title IV provides a complete framework for licensing of commercial land remote sensing systems, including the follow-on system established under title III. The Secretary of Commerce is authorized

to license qualified private entities to operate land remote sensing satellite systems. The Secretary is further authorized to issue regulations to ensure that private systems are operated in accordance with international law and national security concerns. To obtain a license, the licensee must guarantee data from a system will be made available to all potential users on a nondiscriminatory basis.

Title V directs NASA and the Department of Commerce, Interior and Agriculture to continue remote sensing research and development programs. Other appropriate Federal agencies also are encouraged to conduct research and development in remote sensing. The provisions of title V are intended to provide for continued U.S. worldwide leadership in remote sensing technology and applications.

Title VI contains general provisions. The Secretary of Commerce is directed to maintain and upgrade an archive of land remote sensing data and the Federal Communications Commission (FCC) is authorized to allocate radio frequencies to operators of remote sensing systems.

Estimated Costs

In accordance with paragraph 11(a) of the rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. Congress,
Congressional Budget Office,
Washington, D.C., May 15, 1984.

Hon. Bob Packwood,
Chairman, Committee on Commerce, Science and Transportation, U.S. Senate, Dirksen Senate Office Building, Washington, D.C.

Dear Mr. Chairman: The Congressional Budget Office has reviewed H.R. 5155, the Land Remote-Sensing Commercialization Act of 1984, as ordered reported by the Senate Committee on Commerce, Science and Transportation, May 8, 1984. This letter supersedes CBO's May 10 estimate for this bill.

H.R. 5155 provides for the phased transfer of the federal government's civil land remote-sensing activities to the private sector while continuing to oversee their operation in order to preserve national security and certain other international interests of the United States. Transfer to a private party could relieve the federal government of both capital and operating costs associated with the Landsat system. On the other hand, the costs to federal agencies of acquiring remote-sensing data may be expected to increase upon privatization of land remote-sensing activities, and the transfer of such activities may involve a subsidy to the private sector party selected to provide remote-sensing capability. The net result could be either a savings or a cost to the federal government—but the consequences cannot be fully assessed until such time as a contractor has been selected and contract terms and conditions have been determined.

Titles II and III provide the mechanisms for transfer of the Landsat system to the private sector. Title II requires the Secretary of

Commerce (subject to available appropriations) to enter into a contract with a private party to market the data generated by the existing Landsat system. The sale of the data is subject to certian restrictions and requirements, and the federal government retains title to all data generated by the system. The contract is subject to the requirement that it be likely to result in cost savings to the federal government, as determined by the Secretary. If no proposals are found acceptable by the Secretary, he is required to continue operating the system and to market Landsat data.

Title III requires the Secretary of Commerce (subject to available appropriations) to contract with a private party to assume the capability of generating remote-sensing data of a specified minimum volume and quality and to market such data for six years. The contract may provide for indirect and direct financial support by the federal government for a portion of the capital costs of providing remote-sensing capability and for other financial considerations. The contract may not provide for any guarantee of federal purchases and may include a rebate of some percentage of sales to federal agencies. If no bid is found to be acceptable, the Secretary of Commerce is authorized to ensure continued remote-sensing data availability by procuring and operating the necessary systems, to the extent provided in advance by appropriation acts. Section 307 authorizes the appropriation of $60 million for fiscal year 1985 for the purposes of carrying out this title. How much of this amount is spent, and when the outlays occur, depend on the magnitude and type of financial support chosen. There is presently no clear basis for projecting such outlays.

Title IV establishes the authority of the Secretary of Commerce to license operators of land remote-sensing systems. Title V directs the Administrator of the National Aeronautics and Space Administration and other federal agencies to continue and enhance remote-sensing research and development programs. Finally, Title VI provides for nondiscriminatory access to unenhanced land remote-sensing data and requires the Secretary of Commerce to continue to archive land remote-sensing data.

Because the terms and conditions of the contract(s) to be entered into by the government, including the dollar amount of any subsidy to be provided to the contractor, have not yet been determined, the potential budget impact of H.R. 5155 cannot be estimated with any precison. The baseline for any such estimate is the continued operation by the federal government of the civil remote-sensing system. This could cost the federal government as much as $900 million between 1985 and 1989, assuming the need to purchase, launch and operate two additional Landsat D-type units over the period. Sale of data to nonfederal purchasers would partially offset these outlays. Currently, such sales are very small, accounting for only 25 percent of all Landsat data distribution in fiscal year 1983.

The cost of commercialization to the federal government is largely dependent upon the subsidy payments under Section 305 of the bill. The bill relies upon a competitive bidding process to produce the lowest possible subsidy. Although there is no provision in the bill that would require the Secretary of Commerce to accept the bid with the lowest overall price, Section 303 would require any proposed agreement to be reviewed by the Congress. While bids have

been received and reviewed by the Department of Commerce's Source Evaluation Board (SEB), these documents are proprietary and are not available for our inspection.

Conceivably, a private party might be able to take over and develop the land remote-sensing capability required by H.R. 5155 for less than it would cost the federal government to continue the Landsat program, if a "no-frills" system were developed. The Department of Commerce has indicated that such savings are possible and, in fact, that no contract will be awarded unless the projected cost to the government is substantially less than the estimated cost of continued federal operation. At least one participant in the SEB's RFP process has indicated that it would be able to provide Landsat-type capability meeting all government requirements for approximately one-tenth of the cost of the current Landsat system. If such a proposal were accepted, little or no federal subsidy would be required and the total cost to the federal government would be reduced to the cost of purchasing remote-sensing data required by federal agencies, as well as some minimal expense for continued licensing and archiving activites. The net costs to the government under this arrangement would be less than under current law, although the savings cannot be estimated at this time.

On the other hand, it is possible that the subsidy cost will exceed the cost of continued federal Landsat operation, because there is no stated requirement that a subsidy greater than the cost of federal operation be deemed unacceptable. The total cost to the government would also include the purchase of any remote-sensing data required by federal agencies, although this cost might be partially offset by any rebate on federal purchases. Thus, the federal government's subsidy and data costs could exceed the cost of continued federal operation, even before indirect impacts from possible tax credits to the contractor are considered.

In addition to the federal budget impact, it is possible that some additional costs would be incurred by state and local governments if the price of land remote-sensing data rises after the commercialization of Landsat. These governments are relatively small users of remote-sensing data, and their demand for Landsat products has historically been quite sensitive to price increases. Moreover, provisions in Section 603 of the bill that prohibit reproduction by any purchaser of remote-sensing data could increase costs for these users, which have traditionally relied upon sharing satellite data among themselves to reduce costs.

If you wish further details on this estimate, we will be pleased to provide them.

Sincerely,

RUDOLPH G. PENNER, *Director.*

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation:

REGULATORY IMPACT

The legislation requires the Secretary of Commerce to create a new regulatory mechanism for the licensing and regulation of commercial land remote sensing systems. The Department of Commerce will assume theese responsibilities in lieu of its existing management of the Federal land remote sensing system. Therefore, the overall level of responsibility should not be greatly altered and actually may be reduced with the commercialization of land remote sensing.

The legislation also requires the FCC to allocate radio frequencies and the Secretary of Commerce to consult with other Federal agencies, in particular the Departments of State and Defense, to become aware of the effect of proposed land remote sensing systems on U.S. international and national security policies. These are functions that are already performed by each of these respective agencies; any additional impact, therefore, should be minimal.

The Committee notes that the proposed legislation will affect a very small number of firms and individuals in the short term because the commercial feasibility of land remote sensing systems has yet to be proven.

ECONOMIC IMPACT

The legislation facilitates the phased commercialization of the existing Federal land remote sensing system (Landsat) into a commercial land remote sensing enterprise. Enactment of this legislation should result in a net cost savings to the Federal Government even though, in the early years of the commercialization process a federally subsidy will be required.

The legislation also lays the foundation for the emergence of a "new" land remote sensing industry in the United States which should create new job opportunities and provide additional tax revenues to the U.S. Treasury.

PERSONAL PRIVACY

Any applicant for a license pursuant to title IV of the legislation must agree to give the Secretary of Commerce the authority to inspect the facilities and financial records of any land remote sensing system as a condition of obtaining the license. This provision is included in the legislation to ensure compliance with existing U.S. national security and international policies and the principle of nondiscriminatory access to data and to ensure operation of these new land remote sensing industries within the parameters of applicable antitrust laws.

PAPERWORK REQUIREMENTS

The legislation could require additional paperwork because it includes two different RFP to contract with the Federal Govertnment, a reporting requirement on the commercialization process, licensing and regulatory requirements, consultation between Federal agencies, radio frequency allocations by the FCC, and the archiving of data. With the exception of the RFPs and the reporting requirements, however, all of the activities required by this legislation are

already carried out by the concerned Federal agencies. Also, the paperwork burden on the applicant for a commercial land remote sensing license compared to the current licensing requirements of other satellite systems. Finally, and most importantly, the RFP process required by the legislation have alrady been initiated by the Department of Commerce. Therefore, the most onerous paperwork requirement resulting from the legislation may not be necesary if the final contractual award made by the Department of Commerce complies with the legislation.

SECTION-BY-SECTION ANALYSIS

TITLE I: DECLARATION OF FINDINGS AND PURPOSES

Section 101.—Findings

Section 101 contains the findings governing the framework for commercialization of land remote sensing provided by the bill. Some of the more important findings in the view of the Committee are:

1. The Landsat system has established the United States as the world leader in land remote sensing technology;
2. Continuous collection of land remote sensing data from satellites is of major benefit in managing resources;
3. Land remote sensing involves national security concerns and international obligations;
4. The establishment of private land remote sensing ventures is in the national interest;
5. Private industry is best suited to develop markets for remote sensing data;
6. Cooperation between the Federal Government and private industry is necessary to manage Landsat while honoring international and national security responsibilities and broadening data markets enough to support private remote sensing ventures; and
7. Cooperation should be structured to assure data continuity while minimizing Federal expense and regulation.

The Committee believes that the commercialization framework provided by the bill is consistent with these findings. Title II and title III provide for cooperation between the Federal Government and private industry aimed at managing Landsat, developing data markets, and minimizing Federal expense. Title IV creates a framework for the establishment of private ventures and includes provision to protect national security and international interests.

Section 102.—Purpose

Section 102 contains purposes of the bill. The purposes are:

1. To provide a framework for a phased, orderly commercialization of land remote sensing technologies;
2. To assure continuous availability of land remote sensing data;
3. To reaffirm the U.S. policy of making all land remote sensing data available to all potential users on a nondiscriminatory basis;

4. To establish mechanisms for regulation of private land remote sensing systems, with particular attention to relevant national security and international concerns;

5. To preserve the United States' worldwide leadership in remote sensing technology;

6. To minimize Federal expense in providing for a continuous U.S. land remote sensing capability.

Section 103.—Definitions

Section 103 contains definitions of terms used in the bill. The Committee feels that some of the definitions will be vitally important in the implementation of the bill, and the Committee wishes to clarify the intent of some of the definitions.

Paragraph (1) defines the "Landsat system" as Landsats 4 and 5 and related ground equipment, systems, and facilities. This definition is relevant in title II, in which the Secretary of Commerce is directed to contract for private marketing of data from the Landsat system. The Committee excludes Landsat 1, 2, and 3 from the definition because most of the commercially valuable data from these satellites are already in the public domain, and are not likely to contribute to the development of data markets, which is the objective of title II.

Paragraph (2) defines "nondiscriminatory basis" as meaning "without preference, bias, or any arrangement that favors any purchaser or class of purchasers over another." Applications of this definition are contained in subparagraphs (A) through (C).

Subparagraph (A) states that data products must be made available to all potential buyers at standard, published prices. The Committee intends for this to mean that data will be available to each and every potential buyer, rather than merely to the first or highest bidder.

Subparagraph (B) requires that all purchasers are given the same opportunities for access to data, such as timeliness of availability and terms of delivery. The Committee wishes to permit operators to offer various terms of access at various prices, provided that all terms of access are published and uniformly available.

Subparagraph (C) permits "special arrangements, such as volume discounts, gathering of data with certain characteristics requested by a purchaser, and maintenance of secrecy regarding any such arrangements." The availability and prices of such services must be published and uniformly available to all purchasers.

The Committee feels that allowing these arrangements enhances the commercial prospects for land remote sensing. Further, the Committee believes that prohibiting exclusive access to data by any purchaser will preserve the worldwide acceptance of land remote sensing. The Committee's rationale for this paragraph is also discussed in relation to section 601 of the bill.

Paragraph (3) defines "Secretary" as the Secretary of Commerce.

Paragraph (4) defines the term "unenhanced data". The Committee intends for the term "unenhanced data" to mean data that have not been processed. The Committee avoids usage of the term "digital data" in its definition in order to include raw data forms that are not digital.

The Committee believes that the value-added data product industry is separate and distinct from the data generation industry. The references to antitrust law included in the bill by the Committee are intended to clarify further that the generation and sale of unenhanced data are to be separate from any enhancement of data beyond the minimal processing specified in this subsection.

Paragraph (5) defines the term "United States private entity" as any nongovernmental entity or consortium of entities, the majority of whose assets is owned by citizens of the United States, the majority of whose personnel is comprised of citizens of the United States, and whose principal place of business is in the United States.

TITLE II: OPERATION AND DATA MARKETING OF LANDSAT SYSTEM

It is the Committee's intent that a Landsat commercialization contract pursuant to H.R. 5155, as reported by this Committee, must be with a U.S. firm or "United States private entity". The Committee's definition of the term "United States private entity" is meant to convey that position. The Committee realizes that in its definition of "United States private entity" the term "majority", which means "more than 50 percent", has created a certain degree of uncertainty. To remedy this situation, the Committee intends to offer an amendment during floor consideration of H.R. 5155 to conform the Senate's definition of "United States private entity" as used in the Request for Proposals for Transfer of the United States Land Remote Sensing Program to the Private Sector, dated January 3, 1984. In any case, the Senate definition of "United States private entity" is not meant to be a rejection of the Department of Commerce's definition of the term "United States firm."

Section 201.—Operation

Subsection (a) specifies the continuing responsibilities of the Department of Commerce pertaining to the Landsat system. The Department will remain responsible for the orbit, data collection, and eventual disposition of the satellites and the ground equipment used to operate the Landsat system. The Secretary also shall provide data to foreign ground stations according to the terms of existing Memoranda of Understanding.

Subsection (b) permits the Department to extend Memoranda of Understanding relating to foreign ground stations provided that the memoranda expire upon termination of the useful operation of the Landsat system.

Subsection (c) permits the Department to continue to contract for private operation of the Landsat system provided that decision authority and ownership of the system and data remain with the Federal Government.

Section 201 does not alter existing law. The Committee wishes to clarify that the Department's responsibilities for the Landsat system will not be reduced or ended by any contract into pursuant to title II. The use of the term "responsible" is intended to mean that the Department itself does not have to perform the functions specified in subsection (a), but that the Department shall see that the functions are performed.

The Committee recognizes that other nations have constructed Landsat receiving stations at considerable expense. This expense has been incurred, however, with the knowledge that Memoranda of Understanding for receiving Landsat data expire upon termination of the Landsat system.

The Committee also recognizes that extension of any Memorandum may inhibit the marketing opportunities of a contractor under title II.

Potential title II contractors may request assurance for the Department of Commerce that existing memoranda be extended. The Committee expects that the Department will make its intentions regarding the memoranda known to foreign nations and to a potential contractor before entering into a contract pursuant to title II. Subsection (b) is intended to provide the Department complete flexibility in considering the future of the existing memoranda.

Memoranda of Understanding have historically run for 3-year periods. Landsat 5 is expected to last only until 1987. Therefore, the Committee expects that the Department will not enter into any new memoranda that extend beyond 1987.

The operation of the Landsat system is already contracted out to a private firm. Subsection (c) is intended to clarify that operation of the system may continue to be contracted. The Committee encourages the Department to combine the contract for operation of the system with the contract for data marketing authorized by section 202. If such a combination is not practicable, the Department may contract separately for system operation and marketing of unenhanced data.

The Secretary shall publish the date upon which the useful life of Landsat 4 and Landsat 5 terminates. The Secretary shall also keep the Committee advised about whether a Space Shuttle retrieval of Landsat 4 is being negotiated and how such an operation relates to the Committee's efforts to commercialize land remote sensing.

Section 202.—Marketing of Unenhanced Data

This section provides for the first phase of the commercialization process. The Secretary of Commerce is directed to contract, by means of a competitive process, for private marketing of unenhanced data from the Landsat system.

The Committee has received testimony and reviewed evidence that markets for remote sensing data have not developed enough to sustain wholly private remote sensing ventures. For this reason, the Committee feels that the commercialization must proceed in phases, beginning with private data marketing. The contracts provided for in section 202 is structured to accelerate the development of markets for data.

Subsection (a) contains required provisions of the contract for data marketing. because section 201 (c) requires that the government maintain ownership of the data, the contractor will actually sell copies of the data.

Paragraph (1) permits the contractor to set prices of unenhanced data products as long as the contractor makes Landsat data available to all potential purchasers on a nondiscriminatory basis. This

requirement is discussed in conjunction with the definition of "non-discriminatory basis" in section 103 (2).

Paragraph (2) states that the contractor shall compensate the U.S. Government for the right to sell data by payment of an initial fee, payment of a percentage of data sales receipts, or some combination thereof.

Paragraphs (3) and (4) of subsection (a) set conditions under which a contractor may keep and enhance data in order to sell value-added products. Antitrust laws would require that the contractor establish a wholly separate subsidiary for value-added products, which could be given no advantages over other value-added entities in terms of prices or availability of unenhanced data.

Paragraph (3) requires the contractor to pay the U.S. Government the full price of any unehanced data that the contractor elects to use for purposes other than sale. The Committeee feels that payment by a contractor's subsidiary to the contractor itself does not consititute any net cost to the contractor, and that the contractor must pay the full price for data to compete fairly in the value-added data product industry.

Paragraph (5) requires the Secretary of Commerce to demonstrate that any contract pursuant to title II is likely to result in cost savings for the Federal Government. The Committee recognizes that if a contractor passes to the Government a percentage of data sales, cost savings are dependent upon how much data is sold.

Subsection (b) requires the Secretary of Commerce to publish the requirements of subsection (a) before entering into any contract pursuant to title II.

Subsection (c) provides for a review of any proposed contract pursuant to title II by the authorizing congressional committees. The proposed contract may not be finalized until the Committees approve the contract by majority vote or a period of 30 days of continuous session of Congress has passed.

The Committee endorses this subsection as further assurance that any contract pursuant to title II will conform to the expectations of the Committee and the provisions of the bill. If a proposed contract clearly satisfies the requirements of this legislation and the concerns of the Committee, the Committee intends to approve the contract as quickly as practicable. The Committee recognizes that the benefits of a contract pursuant to title II would be maximized by the rapid execution of such a contract.

Section 203.—Awarding of the Contract

Subsection (a) directs the Secretary of Commerce to consider in awarding a contract the financial return to the U.S. Government and the prospective contractor's ability to expand data markets. The Committee feels that expansion of markets during the life of the Landsat system will contribute significantly to the success of land remote sensing commercialization. The Committee expects the Secretary to scrutinize closely the plans for expansion of data markets proposed by prospective contractors.

Subsection (b) states that, in the event no proposal for a contract is acceptable under the terms of title II, the Secretary shall solicit proposals a second time. The second competitive process shall not exceed 120 days in length. If the second process does not attract

any acceptable proposals, the Secretary shall report such finding to the Congress and the Federal Government shall continue to market Landsat data.

The Committee wishes to emphasize the importance of private marketing of Landsat data. Subsection (b) is intended to require the Department of Commerce to make every reasonable effort to contract for private data marketing. While section 202(a) requires the Secretary to contract, section 203(b) was developed in recognition of the possibility that no proposal would meet the requirments of title II. The Committee provides for a second competitive process because of the importance of the contract to the commercialization process and to ensure that the Department vigorously seeks to execute such a contract.

Subsection (c) permits the contract authorized by title II to be combined with a contract under title III. The Committee encourages the Department of Commerce to combine these contracts if practicable. If the contracts are separate, the Committee expects the Department to provide for a smooth transition from the title II contract to the title III contract.

The Committee wishes to reemphasize the importance of the contract authorized by title II. Titles III and IV represent advanced stages of the commercialization process which would be greatly enhanced by expansion of data markets during the life of the Landsat system.

The Committee also is aware that other nations are developing remote sensing systems that will compete with U.S. systems. The French SPOT system, in particular, has been extensively promoted several years in advance of its operation. The Committee feels that U.S. private sector marketing of remote sensing data must begin as quickly as possible to ensure that U.S. systems can compete successfully against foreign systems.

TITLE III: DATA CONTINUITY AFTER THE LANDSAT SYSTEM

Section 301.—Purpose

Section 301 contains the purpose of title III. The primary purpose of title III is to provide for a transition from Government operation of Landsat to private operation and ownership of commercial remote sensing systems. Title III represents the transition from the government system discussed in title II to the commercial evironment provided for in title IV.

A critical element and purpose of title III is data continuity. Much of the testimony the Committee has received on this issue has cited continuous availability of data as an important component of successful commercialization. For the purposes of title III, data continuity means that a follow-on system to Landsat should be developed in time to begin operation upon the termination of the useful life of Landsat 5.

Another purpose of title III is to provide cost savings for the U.S. Government. The contract authorized by title III is intended to cost the Federal Government less money than continuation of the present Landsat system. The Committee feels that a private remote sensing satellite system can be developed at less expense than a government system and can generate greater revenues, especially

if development of the system is market driven rather than technology driven.

Section 302.—Data Continuity

Section 302 directs the Secretary of Commerce to evaluate proposals for development and operation of a land remote sensing system to follow the Landsat system. Any such proposals must contain details of the system's capabilities, a projected date upon which operation of the system could begin, and plans for expanding data markets and satisfying international and national security concerns. As in title II, the proposal must be selected and evaluated by means of a competitive process.

Section 302 specifies a period of 6 years for the generation and marketing of data pursuant to the contract authorized by title III. The Committee wishes to provide the title III contractor sufficient time to develop data markets to the point where multiple private systems can compete and profit. On the other hand, the Committee is reluctant to authorize an overly lengthy contract, because competition could be inhibited by the continuation of a government contract after markets have matured. The Committee feels that a contract period of 6 years from the beginning of system operation balances these concerns.

Section 303.—Notification Regarding Awarding of the Contract

Section 303 authorizes the Secretary of Commerce to enter into a contract after evaluating the proposals discussed in section 302.

The contract shall provide for generation of remote sensing data for 6 years. Subsection (a) contains criteria which the Secretary shall use in evaluating proposals for such a contract. These criteria are:

1. Availability of data upon the expected termination of the Landsat system.

The Committee encourages the Secretary of Commerce to consider the projected date upon which operations could begin to contract with an entity that could eliminate or minimize any gap in the availability of land remote sensing data from a U.S. system. With the advent of foreign land remote sensing competition, the Committee is concerned about the potential consequences of a data gap of more than several months.

2. Quantities and qualities of data to be generated.

The Committee does not wish to specify a minimum level of technology as acceptable because the Committee feels that the follow-on capability should be market driven. The Committee does feel, however, that ability to generate high qualities and quantities of data should be looked upon favorably by the Secretary of Commerce.

3. Cost of the system to the Federal Government.

The Committee recognizes that Federal financial assistance—a subsidy—will be required to assure development of a capability which meets the requirements of the bill and to permit the market to expand to commercial proportions. Even with the subsidy, however, the net cost to the Federal Government should be less than the projected costs of continuing the existing Landsat system. This assumption is based on the commitment of the Department of Com-

merce not to "make an award under the RFP unless the projected cost to the government is substantially less,[1] than the cost of continuing the Landsat system and the fact that the legislation requires a competitive process for both the title II and title III contract awards."

To further ensure this "cost savings", the Committee bill requires congressional approval of the Secretary's decision to enter into any title II or title III contract. Although minimizing the total cost to the Federal Government is preferable and an important concern of the Committee, the Committee feels that the total dollar value of the financial assistance should not be viewed standing alone but also in comparison to the funding to be provided by the entity making the proposal.

4. Potential for expansion of data markets.

Section 302 requires that proposals contain plans for market expansion. The Committee expects the Secretary of Commerce to study and compare proposed marketing plans to the extent practicable.

5. Percentage of data sales offered to the Federal Government.

This criterion is relevant in conjunction with cost to the Federal Government and the marketing incentive provided for in section 304.

6. The contractor's ability to advance remote sensing technology.

The Committee hopes that U.S. leadership in remote sensing technology will be preserved by implementation of the bill. In addition to the Federal research and development activities required by title V, the Committee feels that research and development by the title III contractor is desirable.

7. The commercial viability of the proposal.

Because the objective of title III is to create a commercial land remote sensing system to follow Landsat 5, the Committee wishes to emphasize the importance of the commercial viability of the follow-on system's technology and marketing plan.

8. Technical competence and financial condition of the contractor.

The Committee feels that these factors should be considered to ensure that the contractor selected by the Secretary of Commerce can fully carry out the responsibilities of the contractor.

9. Proposed procedures for satisfying U.S. national security concerns and international obligations.

Obviously, any contractor under title III must cooperate with several Federal agencies to satisfy national security and international concerns. The Committee expects that, at a minimum, the contractor will adhere to the national security requirements specified in Appendix A of the Request for Proposals issued by the Department of Commerce on January 3, 1984. The Committee wishes to emphasize the importance of national security and international concerns, and the Committee expects the Secretary of Commerce to scrutinize this section of each proposal closely.

10. Such other factors, including marketing of unenhanced data from the Landsat system, as the Secretary deems appropriate.

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[1] This quotation is taken from a letter from the Deputy Secretary of Commerce to the Chairman and the Ranking Minority Member of the Committee dated Apr. 5, 1984.

The Committee includes marketing of Landsat data because, if the title II and title III contracts are combined, the marketing of Landsat data is a relevant factor in the title III evaluation.

The Committee does not intend to set priorities or assign relative importance to these criteria.

The Committee also notes that pursuant to the terms of the contract, the Secretary would pay for the "capability" of generating data for the Federal Government. Therefore, the title III contractor would own all of the data and hardware.

Subsection (b) provides for review by the authorizing congressional committees of any proposed contract pursuant to title III. Like section 202(c), this provision states that a proposed contract may not be finalized until the Committee has approved the contract by majority vote or a period of 30 days of continuous session of Congress passes.

The Committee feels that review of any proposed contract is appropriate because proposals have been solicited and analyzed before the enactment of this enabling legislation. The Committee does not intend to obstruct the commercialization process by this requirement, but merely to ensure that the implementation of the bill is consistent with the Committee's intent.

Subsection (c) states that, in the event no proposal for a contract is acceptable under the terms of title III, the Secretary shall solicit proposals a second time. The second competitive process shall not exceed 180 days in length. If the second competitive process does not attract any acceptable proposals, the Secretary may provide for data continuity be development of a Federal system.

The Committee has attempted to balance the need for data continuity with the desire to transfer responsibility for land remote sensing systems to the private sector. The provision requiring a second competitive process if the first process does not result in the award of a contract is intended to ensure that a comprehensive, exhaustive effort to commercialize land remote sensing is made by the Department of Commerce. The requirement that such a second competitive process be carried out quickly is made in the interest of data continuity. If the second process produces no acceptable proposal, the Committee expects that the Secretary of Commerce will immediately seek to provide continuity by development of a Federal follow-on system.

Section 304—Marketing Incentive

Section 304 states that a contract pursuant to title III may provide that the percentage of sales paid by the contractor to the Federal Government may decrease as levels of data sales increase.

Title III is intended to establish the feasibility of commercial operation of land remote sensing systems so that wholly private systems may profitably operate in accordance with title IV. If this phase is to be successful, a contractor under title III will have to market data aggressively. The Committee has sought to ensure that market development will occur by including marketing plans and commercial viability as evaluation criteria for proposals for a title III contract.

The Committee endorses section 304 as further assurance that aggressive data marketing will occur. By stipulating that a contrac-

tor pay the Federal Government a percentage of initial sales receipts and providing for decreases in the percentage corresponding to certian increments of sales increases, a contract could provide considerable financial incentive for the contractor to market data aggressively.

The Committee strongly recommends that the Secretary of Commerce seek to include such a provision in any contract pursuant to title III. Further, the Committee feels that the incentive should be tied to sales volume rather than revenues, so that the contractor would seek to sell large volumes of data at reasonable prices, rather than smaller quantities at higher prices. The Committee believes that such a provision would promote the broadest utilization of data.

Also, the Committee recommends that such a marketing incentive not apply to sales of data to any subsidiary that the contractor might establish to engage in value-added activities. The Committee cautions that allowing such a provision to apply to sales to a subsidiary would provide incentive for the contractor to sell quantities of data to a subsidiary for reasons other than legitimate untilization of the data.

Section 305.—Terms of the Contract

Subsection (a) designates certain conditions as required, permissible, and prohibited terms of any contract entered into pursuant to title III.

Paragraph (1) requires that the contractor sell unenhanced data to all potential buyers on a nondiscriminatory basis. This requirement is discussed in conjunction with definition of "nondiscriminatory basis" in section 103(2).

Paragraph (2) states that the contractor may sell processed data only in accordance with antitrust laws. As in title II, antitrust laws would require the contractor to establish a wholly separate subsidiary if the contractor desired to sell value-added data products. Such a subsidiary could not be given any competitive advantages in acquiring data or in terms of access.

Paragraph (3) prohibits any guarantee of data purchases by the Federal Government as part of a contract pursuant to title III. The Committee recognizes that awarding of the contract should be based partially on a prospective contractor's ability to meet the expected data requirements of the Federal Government. The Committee does not, however, wish to create a sole source or a monopoly. The Committee further feels that the absence of any guarantee of federal purchases will ensure that the contractor endeavors to operate effectively and to price data products competitively. This is especially true in light of the expected foreign competition during the period of the title III contract.

The Committee expects Federal agencies to purchase data according to their actual needs for data, which would not occur if certain levels of purchases were guaranteed. By precluding guaranteed purchases, the Committee places agencies in a commercial environment, where data are available from private entities at privately set prices. This is an important aspect of the transition to a commercial environment provided by title III.

Paragraph (4) provides that a contractor may use civilian government satellites as a platform for a remote sensing system under certain conditions. The conditions are that the contractor compensate the Government for all related costs, including launch costs, and that the utilization would not comprise the intended mission of the Government satellites.

The Committee finds it improbable that a remote sensing system using a civilian government satellite could meet the requirement of title III. The Committee feels, however, that this use should not be precluded.

If the Secretary of Commerce proposes to enter into a contract providing for such use, the Committee expects to be fully informed of the proposed arrangement for payment by the contractor to the Government and to be assured by the agency responsible for the satellite that the use in no way compromises the civilian Government mission.

Paragraph (5) provides that the Federal Government may provide indirect and direct financial support, including loans and loan guarantees, and other financial considerations to the title III contractor to offset costs. (The term "other financial considerations" is meant to include innovative financing mechanisms such as interest rate buydowns, low-interest loans, etc., and not in-kind contributions.)

The Committee realizes that during the transition period the title III contractor will probably require subsidization. As specified in section 303(a)(3), However, the Committee is concerned about the cost of the title III system to the Federal Government. To balance these objectives, the Committee has provided authority for a variety of financing options which can reduce the costs to the Federal Government and use Federal funds in a most cost-effective manner while not compromising the commercial potential of the title III contract.

Subsection (b) requires the Secretary of Commerce to determine whether a contract entered into under title III effectuates the purposes of title II. If a title III contract does not satisfy the purposes of title II, the Secretary is directed to carry out the provisions of title II.

The Committee recognizes that the Department of Commerce has already received proposals from the private sector. The Department's Request For Proposals (RFP) required proposals for development of a follow-on system (title III), but merely permitted proposals for marketing of Landsat data (title II). The Committee believes that this RFP will satisfy the purposes of title III, but may not satisfy the purposes of title II.

Subsection (b) is intended to clarify that the awarding of a contract pusuant only to title III is perfectly acceptable, provided that title II is subsequently satisfied by a second competitive process.

Section 306.—Report

Section 306 states that the Secretary of Commerce shall report to the Congress within 2 years of the commencement of the follow-on system's operation according to a contract under title III. This report will be on the feasibility of wholly private responsibility for land remote sensing systems. The report shall include any recom-

mendations for legislation to accomplish further the purposes of the bill.

The Committee intends to oversee implementation of the bill. In recognizing that further legislation might be necessary or desirable to carry out the purposes of the bill, the Committee feels that the Secretary's assessment of the progress of the transition provided by title III will be valuable. The Committee wishes to evaluate the progress of the transition as early as possible so that any further legislation can be developed in a timely manner, consistent with the objectives of data continuity and the creation of an appropriate commercial environment.

Section 307.—Authorization of Appropriations

Section 307 authorizes appropriations of up to $60 million for fiscal year 1985. The Committee anticipates that these funds will be used to begin development of a land remote sensing system according to a contract under title III. Because the actual need for funding will be uncertain until a contract is proposed, the Committee has sought to provide an authorization sufficient to permit, in the interest of data continuity, substantial progress toward development of a remote sensing system during fiscal year 1985. The Committee will consider the appropriateness of the $60 million figure when reviewing a proposed contract in accordance with section 303(b). The Committee instructs the Secretary to submit a formal budget request for Landsat commercialization activities as soon as a reasonable cost estimate is available.

Section 308.—Termination of Authority

Section 308 states that the authority granted by title III expires 10 years after the date of enactment of the bill. This section should be read in conjunction with the specification that the system developed under title III generate data for 6 years. The Committee intends the termination of authority after 10 years to mean that the system must begin operation within 4 years of the enactment of the bill to comply with title III.

TITLE IV: PRIVATE LAND REMOTE SENSING SYSTEMS

Section 401.—General Authority

Title IV provides a regulatory framework for private remote sensing satellite systems. The Committee recognizes that commercial remote sensing activities must be regulated to assure fair competition and compliance with international obligations and national security concerns of the United States. Currently, no agency has statutory authority to promulgate and enforce such regulations.

The purpose of title IV is to provide sufficient Federal regulation to satisfy the aforementioned concerns while preserving a commercial environment within which private remote sensing systems can compete and prosper.

Section 401 directs the Secretary of Commerce to license qualified U.S. private entities to operate civil land remote sensing satellite systems. Licenses may be granted only after the Secretary determines in writing that applicants will comply with the requirements of the bill, any regulations issued pursuant to the bill, and

international obligations and national security concerns of the United States.

This section establishes the Department of Commerce as the lead agency in regulation of private land remote sensing systems. The Committee recognizes that other agencies have relevant interests relating to private remote sensing ventures, and the Committee has attempted to address these interests by providing for interagency cooperation in titles IV, V and VI.

Section 402.—Conditions for Operation

Section 402 specifies conditions that a potential system operator must meet in order to be licensed to operate a land remote sensing system.

Subsection (a) states that no private entity may operate a land remote sensing system subject to the jurisdiction or control of the United States without obtaining a license pursuant to section 401.

Subsection (b) contains requirements to be specified in any license issued pursuant to title IV. A summary of the requirements follows:

1. Licensees shall make available data generated by systems to all potential users on a nondiscriminatory basis. The meaning and intent of this requirement are described in the discussion of section 103(2) and section 601 of this report. The Committee feels that this requirement is appropriate for wholly private systems as well as for government contractors.

2. Licensees shall dispose of satellites in a manner satisfactory to the President upon termination of their operations. The Committee wishes to emphasize that licensees' responsibilities do not end where remote sensing satellites cease operating.

3. Licensees shall promptly make available to the Secretary of Commerce all data generated by systems. This requirement is made in conjunction with the requirement that the Secretary maintain and upgrade a Government archive of land remote sensing data. This provision is discussed in section 602.

4. Licensees shall inform the Secretary of complete orbit and data collection characteristics of systems, obtain advance approval of deviation from the specified characteristics, and inform the Secretary immediately of unintended deviation from such characteristics.

5. Licensees shall obtain advance approval from the Secretary of any agreement with a foreign nation, entity, or consortium involving either a foreign nation or entity. The Committee does not intend to impose this requirement upon mere sales of data to foreign entities. The requirement is intended to apply to more extensive arrangements. The Committee expects that the Secretary will consent to such agreements unless a threat to national security, a violation of an international agreement to which the United States is subject, or the regulations issued pursuant to this bill is perceived by the Secretary.

The Committee further expects that the Secretary will consult with cabinet officials where appropriate in making any determination described above, and provide full opportunity, including public hearings where appropriate, for licensees to demonstrate that their purposes are consistent with the bill, any regulations issued pursu-

ant to the bill, and the national security and international interests of the United States.

6. Licensees must operate systems in a manner consistent with international law. The Committee uses the term "international law" to mean any international agreement, treaty, or convention to which the U.S. Government is subject.

7. Licensees must permit the inspection of facilities and financial records.

8. Licensees must agree to surrender their licenses and terminate operations upon a finding by the Secretary that continued operations would be detrimental to the national interest. The Committee expects that the Secretary will exercise this authority only after allowing licensees full opportunity, including public hearings, to demonstrate that continued system operation will be consistent with the national interest.

9. Licensees shall not engage in any sale of processed data except in a manner consistent with applicable antitrust laws.

Section 403.—Responsibilities of the Secretary

Section 403 makes the Secretary of Commerce responsible for national security concerns and international obligations that are relevant to land remote sensing. These responsibilities are to be carried out in consultation with appropriate Federal agencies. The responsibilities include:

1. Responsibility for all land remote sensing activities of U.S. nonGovernmental entities.

The Committee is aware that the 1967 Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies) states the space activities of nonGovernmental entities "shall require authorization and continuing supervision by the appropriate state party to the treaty." The Committee feels that the Department of Commerce, as the lead agency for regulation of U.S. private land remote sensing activities, should bear the responsibility for space activities pursuant to the bill.

2. Liability for damage caused by space objects registered with or licensed by the Federal Government.

The Convention on International Liability for Damage Caused by Space Objects (1972) makes nations "from whose territory or facility a space object is launched" responsible for damage caused by any such space object. The Committee feels that this international agreement is indicative of the need for Federal regulation of nongovernmental land remote sensing systems.

3. Registration with appropriate international authorities of objects launched into space by U.S. nonGovernmental entities.

The Convention on the Registration of Objects Launched into Outer Space (1974) requires registration of all space objects, including date and territory of launch and the function of the space object. The Committee intends for this responsibility, in the case of land remote sensing satellites, to be carried out by the Secretary of Commerce.

The Committee feels that section 403 ensures that the United States will adhere to its international responsibilities without jeopardizing the commercial viability of land remote sensing.

Section 404.—Authority of the Secretary

Section 404 provides the Secretary of Commerce proper authority to ensure that licensees comply with the requirements specified in section 402.

The Secretary is authorized to inspect the facilities and financial records of any licensee under title IV. Such inspection may be necessary to determine whether licensees have engaged in sale of data on a nondiscriminatory basis or made all data available to the Secretary for archiving purposes.

Section 404 further authorizes the Secretary to provide for penalties for noncompliance with the requirements of licenses or regulations issued pursuant to section 405. Such penalties may include termination, modification, or suspension of licenses, and civil penalties not to exceed $10,000. Each day of operation in violation of any requirement will constitute a separate violation.

The Committee believes that the Secretary must be empowered to impose penalties for noncompliance in order to enforce the requirements of title IV.

The Committee wishes to ensure that system operators do not willfully violate the requirements of title IV and be permitted to do so upon payment of a small civil penalty. For this reason, the Committee has specified that each day in violation of such requirements constitutes a separate violation, and that the Secretary may suspend, modify, or revoke licenses. The Committee expects that penalties will be imposed by the Secretary only after licensees have had full opportunity, including public hearings where appropriate, to comment upon the Secretary's determination that the licensees have not complied with the requirements of the bill or regulations issued pursuant to the bill.

Section 405.—Regulatory Authority of the Secretary

Section 405 authorizes the Secretary of Commerce to issue regulations to carry out the provisions of title IV. Regulations may be issued only after public notice and comment in accordance with section 553 of title 5, United States Code. The Committee expects that the Secretary will promulgate only regulations that are necessary to enforce the requirements of title IV and that the Secretary will avoid significant alteration of the commercial environment provided by the bill.

Section 406.—Agency Activities

Section 406 details appropriate Federal agency activities in cooperation with private land remote sensing systems. The Committee feels that agency cooperation with private system operators is desirable, provided that ths cooperation does not afford the private system operators any unfair competitive advantages.

Subsection (a) states that private sector parties may apply for licenses under title IV to operate land remote sensing systems using civilian U.S. Government satellites or vehicles as platforms for such systems. The Secretary of Commerce may license such systems provided that:

1. Such systems meet the conditions of title IV;

2. The system operator immediately reimburses the Government for all costs related to such use; and

3. The use in no way compromises intended civilian Government missions, as determined by the agency responsible for the satellite or vehicle.

Subsection (b) gives the Secretary the discretionary authority to assist a private operator in finding an appropriate opportunity to use a civilian Government launch vehicle, provided that the private operator meets the conditions of subsection (a). The Committee feels that the Secretary should have this authority even though this appears to be a most unlikely application of a commercial land remote sensing system at this time.

Subsection (c) indicates that a Federal agency may enter into an agreement with a private operator that permits use of a civilian government satellite or vehicle as a platform for a civil land remote sensing system on a space available basis if:

1. Such an agreement is consistent with the agency's mission and statutory authority;

2. Funds for such an agreement are provided in advance in appropriations acts; and

3. The private operator is licensed pursuant to the terms and conditions established in title IV.

The Committee strongly supports the commercialization of land remote sensing and feels that the Federal Government should provide operators with the maximum degree of flexibility to obtain a launch vehicle or platform. The Committee, therefore, does support the involvement of Federal agencies to the extent permitted by law. However, as noted above, the Committee feels that at this time most commercial land remote sensing applications will tend to be free-flying satellites owned by the private operator.

Subsection (d) indicates that NASA is exempt from the provisions of this section and subsection (e) indicates that this section is not meant to affect the authority of the FCC to assign radio frequencies. The Committee has established new procedures which will affect the time-frame for the assignment of radio frequencies by the FCC, but these are discussed in section 606.

Section 407.—Termination

Section 407 contains a sunset provision for the authority granted the Secretary pursuant to title IV if in 20 years there is no private sector party or consortium that has been licensed or if in 20 years there is no private sector party or consortium that is operating a land remote sensing system pursuant to title IV.

The Committee realizes that 10 years ago not much thought was given to the commercial value of land remote sensing. As a matter of fact, in 1972 the concept was purely experimental. The Committee also realizes that the rapid technological advances that are being made in the area of remote sensing and space technology might render the provisions of this title obsolete in 20 years. As a safeguard against the maintenance of an unnecessary regulatory process, the Committee has included a sunset provision in this title that takes into consideration the state of the market in 20 years and the need for the regulations and licensing provisions included in this title.

TITLE V: CONTINUED REMOTE SENSING RESEARCH AND DEVELOPMENT

Title V directs those Federal agencies involved in land remote sensing to continue and enhance research and development activities in remote sensing technologies and applications. Title V also reiterates the Committee's intent that the United States maintain its worldwide leadership in remote sensing technologies and applications.

This title also provides for the use or sale of experimental data generated by Federal research and development activities.

The Committee notes that the research and development activities in remote sensing performed by agencies of the U.S. Government, NASA, have established the United States as the worldwide leader in remote sensing technologies and applications. The Committee also notes that private operators of land remote sensing systems may be unable, especially in the near future, to undertake an extensive research and development effort.

Other nations are developing land remote sensing systems which will compete with private U.S. systems. The rapid advance in remote sensing capabilities by other nations is viewed by the Committee as a signal that the United States must continue and enhance remote sensing research and development programs to maintain worldwide leadership in this area.

The Committee expects that space commercialization will expand and mature to the point where private sector parties will find it profitable to engage in extensive research and development programs. In the near term, however, private efforts are more likely to be aimed at cost efficiencies and market expansion than at development of new technologies and applications.

Because of the impending foreign competition and the probable inability of the private sector to perform extensive research and development in the near future, the Committee emphasizes the importance of Federal research in remote sensing. To maximize the applications of this research, the Committee has structured title V to provide for cooperation between agencies, State and local governments, the private sector, universities, foreign nations, and international organizations.

Section 501.—Federal Research and Development

Section 501 specifies appropriate remote sensing research and development roles for various Federal agencies.

Subsection (a) contains the research and development role of NASA. Paragraph (1) directs the Administrator of NASA to continue and enhance remote sensing research and development activities.

The Administrator also is authorized and encouraged to conduct experimental remote sensing programs and to develop remote sensing technologies. Paragraph (2) encourages the Administrator to conduct programs in cooperation with other public and private research entities, and to enter into arrangements which will foster cooperation and enhance technologies. These arrangements may include joint ventures.

The Committee feels that NASA should be the lead agency in development of remote sensing technologies. The Committee does not

wish to discourage NASA's study of applications of remote sensing data, but merely to emphasize the importance of NASA's role in development of technologies.

Subsection (b) details the appropriate remote sensing research and development roles of the Departments of Commerce, Interior, and Agriculture. The Secretaries of those agencies are directed by paragraph (1) to continue research in applications of remote sensing data, monitoring of the Earth and its environment, and development of technologies for such monitoring.

Paragraph (2) authorizes these agencies to conduct these activities in cooperation with other public and private research entities, and to enter into arrangements which will foster cooperation and enhance applications of data, monitoring activities and technology.

The Committee believes that the Departments of Commerce, Interior, and Agriculture are the appropriate lead agencies for research in applications of remote sensing data. The Committee expects that these and other agencies will cooperate to maximize development of data applications and to minimize undesirable duplication of research activities.

During its Landsat hearing, the Committee learned of the U.S. Geological Survey EROS Data Center's excellent national and international reputation as a leader in conducting research in developing applications of satellite remote sensing. The Committee expects the EROS Data Center (EDC) to continue and to enhance the activities for monitoring the Earth and its environment. Development of satellite remote sensing data applications by the Departments of Interior and Agriculture are key to achieving future benefits from our current investment in the U.S. satellite remote sensing program. The satellite remote sensing research being conducted at EDC focuses on developing techniques that merge and intergrate the satellite image data with other types of computerized, cartographic, geographic, and resource data. Advanced computerized information processing techniques are then applied to the multiple sets of data to produce information for land resource planning and management.

The EDC is to continue working with Department of the Interior, Bureaus, Offices, and with other Federal agencies, with State and local governments, and with foreign governments and international organizations to develop new applications of satellite remote sensing data and to train potential users world-wide in the use and application of these data. Likewise, the Departments of Commerce and Agriculture and other Federal agencies are encouraged to continue to examine and develop new opportunities for applications of satellite remote sensing data.

Subsection (c) encourages other Federal agencies to conduct research and development programs in remote sensing where consistent with the authorized missions of the agencies.

Section 502. Use of Experimental Data

Section 502 permits the use of data gathered in Federal experimental land remote sensing programs in related, government-funded research and development programs. This data may not, however, by used for commercial purposes or in competition with private activities, except as provided by section 503.

Section 503.—Sale of Experimental Data

Section 503 states that data gathered in Federal experimental land remote sensing programs may be sold en bloc by a competitive process to any U.S. entity that will market the data on a nondiscriminatory basis.

Sections 502 and 503 represents the Committee's attempt to provide for appropriate utilization of experimental data without undermining the commercial viability of private land remote sensing systems. The Committee believes, on one hand, that experimental data will have significant value and that their use should not be restricted to the sponsoring Federal agency. The Committee recognizes, on the other hand, that commercial use of experimental data could adversely affect the emerging land remote sensing industry.

The Committee strongly endorses the broadest possible use of experimental data for research purposes. The Committee expects that Federal agencies will cooperate with one another, State and local governments, and universities in maximizing use of experimental data for research programs, especially for research in applications of data.

The Committee believes that Federal experimental data having significant commercial value should become publicly available. The Committee has placed two restrictions on the availability of this data to prevent their availability from excessively infringing on commercial operations of private systems.

First, data may be sold by agencies "en bloc". The Committee uses this term to mean that agencies should not sell specific, individual data products. The sale of bits and pieces of data by agencies is viewed by the Committee as an inappropriate role for agencies and a practice that could greatly inhibit private data marketing opportunities, especially if data products were made available at nominal prices.

The second restriction is that data must be sold "by means of a competitive process". The Committee intends this requirement to assure that Federal experimental data do not become publicly available at nominal prices. The Committee feels that this restriction, in combination with the "en bloc" requirement, ensures that data will be sold only in fair competition with privately generated data.

The Committee believes that sections 502 and 503 balance the objective of broad use of Federal experimental data and the concern that use of such data not undermine the marketability of privately generated data.

TITLE VI: GENERAL PROVISIONS

Section 601.—Nondiscriminatory Availability of Data

Section 601 gives a statutory basis to the existing U.S. policy that land remote sensing data generated by any system operator be made available to all users on a nondiscriminatory basis. Subsection (b) clarifies that "system operator" applies to contractors under titles II and III and licensees under title IV.

The Committee expects that the Secretary of Commerce will exercise the authority granted by the bill, particularly by title IV, to

ensure that all system operators comply with the nondiscriminatory availablity of data requirement as defined in section 103(2).

Subsection (c) requires system operators to make publicly available prices, policies, procedures, and other conditions upon which the operator will sell data. To fulfill this requirement, the Committee feels that any offer to sell or to deliver data and all data sales policies must be published in advance by the operator. System operators are not required to disclose names of buyers and their purchasers, except to the Secretary of Commerce pursuant to section 404(1).

The Committee is aware that Landsat data have been sold to non-U.S. Government users and data have been made available to all purchasers on a nondiscriminatory basis. Indeed, the data policy of the Landsat program can be considered to be a cornerstone of the U.S. "open skies" policy and of the use of space for peaceful purposes. By following this policy, the United States has been able to blunt criticism of other activities, such as operation of classified surveillance satellites. The policy has also demonstrated to the entire world U.S. adherence to the principle of the free flow of information.

The Committee so strongly supports the doctrine of nondiscriminatory access to data that it has given this concept a statutory basis. The Committee feels that this principle is fundamental to any remote sensing activity and that it is a key component of U.S. foreign policy interests.

During the Committee's Landsat hearing, the issue was raised that adherence to the principle of nondiscriminatory access to data was not in the best interest of a commercial entity since it would preclude a private operator from contracting to acquire specific scenes for the proprietary use of a sole purchaser. The Committee is sensitive to this issue and realizes that "land remote sensing for hire" could have a potential marketplace and that site-specific scenes could have significant value. The Committee feels, however, that the benefits from such a commercial enterprise pale in comparison with the benefits to the United States of maintaining allegiance to the principle of nondiscriminatory access to data. The Committee realizes that in its efforts to promote commercial land remote sensing activities it has established certain barriers, in particular concerning U.S. foreign policy and national security concerns. The Committee feels, however, that these are reasonable costs to be incurred by an operator and, although they might reduce the profitability of land remote sensing, they should not impede commercialization of land remote sensing activities.

At the same time, the Committee feels that within the requirement for nondiscriminatory access to data certain marketing techniques would still be appropriate. For example, a pricing policy that allowed a system operator to vary the price of data in inverse relation to the time of data delivery would be acceptable if the data were available to all potential customers. Also, volume discounts would be acceptable provided that such discounts would reflect the demonstrable reduction in costs associated with such an order, would not result in subsidization of larger customers by smaller customers, and would be available to all potential customers. What the Committee does not find acceptable is the sale of a single copy

of an original scene to the highest bidder. Such an action would transfer the proprietary control of the data from the operator to the purchaser and would be in direct conflict with the principle of nondiscriminatory access to data, under equal terms and conditions, by all potential purchasers.

In summary, the Committee endorses certain arrangements, such as volume discounts, secrecy regarding customers, and varying terms of delivery, as permissible provided that such arrangements are equally available to all purchasers. The fundamental requirement that the Committee wishes to imposed upon system operators is that all data generated by systems be available to all potential purchasers. The Committee feels that the definition of "nondiscriminatory basis" contained in section 103(2) properly balances "open skies" with commercial viability of land remote sensing.

Section 602.—Archiving of Data

Section 602 provides for the maintenance and upgrading of a Government archive of land remote sensing data.

Subsection (a) states that it is in the public interest for the U.S. Government to maintain a land remote sensing data archive for historical, scientific and technical purposes. Further, paragraphs (2) and (3) state that the Government should control the content of the archive and assure the quality and continuity of the archive.

The Committee believes that the maintenance of an archive of land remote sensing data is a public service that the Government should continue to provide even when land remote sensing is a wholly private commercial activity. The Committee wishes to stress two points. First, the public interest is best served by the maintenance and upgrading of an archive. Second, operators of private land remote sensing systems can not be expected to maintain extensive archives of their own. In considering these issues, the Committee has found that representatives of the Federal Government, the private sector, and users of land remote sensing data share these views and endorse the continuation of Government data archiving.

Subsection (b) designates the Secretary of Commerce as the Federal official responsible for the Government archive. The Secretary is directed to maintain and upgrade a basic, global set of land remote sensing data, and to assure proper storage and preservation of the basic data set. Subsection (b) also states that the Government archive will remain distinct from any system operator's inventory of data.

The provision that the Government archive will be separate from any private sales inventory is intended to clarify that the archive will not be utilized by private system operators as a sales inventory from which private operators could continually request copies of data for sales or other purposes. The Committee expects that private operators will maintain their own inventories of data for such purposes.

Subsection (c) provides instructions for the Secretary of Commerce to follow in determining the content of the archive. The baseline for the archive will be data currently archived at the EROS Data Center in Sioux Falls, S. Dak.

In upgrading the archive, the Secretary is directed to consider:

1. Technical and scientific developments and needs;
2. The advise of users and producers of land remote sensing data; and
3. The public need for geographically duplicative data with varying seasonal, spatial resolution or spectral differences.

The Secretary may include, as deemed appropriate, Landsat data, data generated pursuant to titles III and IV of the bill, and data from foreign systems or foreign ground stations. The Committee intends to provide the Secretary maximum discretion in determining the content of the archive, and the Committee expects the Secretary to fully follow the guidelines of this section and endeavor to maintain an archive that serves the public interest to the fullest possible extent.

Subsection (d) states that operators will promptly make all data available to the Secretary in a form suitable for processing for storage and access. The Secretary may pay operators reasonable costs for reproduction and transmittal of data.

The Committee expects that, where the Secretary causes operators to modify their system operation in order to collect data with specified geographic or spectral characteristics for the Government archive, the Secretary will pay all costs associated with the collection of such data in addition to reproduction and transmittal costs.

Subsection (e) specifies the rights of operators to sell data in relation to policies for distribution of data from the Government archive. Operators shall have the exclusive right to sell all data provided to the Government archive for a period to be determined by the Secretary, but not to exceed ten years from the date data are sensed. Operators may relinquish the exclusive right by consenting to distribution from the archive prior to the normal expiration date of the exclusive right.

In the case of data from the Landsat system generated prior to the implementation of a contract pursuant to title II, the contractor shall have the exclusive right to sell the data during the period of the contract.

The intent of subsection (e) is to ensure that the existence and maintenance of the Government archive in no way infringes upon the commercial operations of any contract or system operator pursuant to the bill. Data from the Government archive will be distributed only upon the consent of the relevant contractor or operator or upon the expiration of a period of time during which the commercial value of the data will have diminished enough to warrant distribution.

In setting the period of time during which a contractor or operator shall have the exclusive right provided for in subsection (e), the Committee expects the Secretary to balance the commercial interests of such contractor or operator with the public, historical, and scientific interests relating to availability of the data. The determination of an appropriate time period will, in the view of the Committee, require consultation with users and producers of land remote sensing data. The Committee expects the Secretary to establish one time period which shall apply to all contractors and operators.

Subsection (f) states that after the expiration or relinquishment of the exclusive right provided by subsection (e), data provided to

the Government archive shall be in the public domain and available at prices reflecting reasonable reproduction and transmittal costs.

The Committee feels that subsection (f), in conjunction with subsection (e), maximizes the public availability of land remote sensing data without adversely affecting the commercial viability of private land remote sensing systems.

Subsection (g) relates to the facilities to be used in carrying out the requirements of section 602. The Secretary is directed to use, to the extent practicable, existing Government facilities.

The "existing government facilities" referred to in section 602(g) are those located at EDC in Sioux Falls, S. Dak. Based on the testimony obtained by the Committee, the personnel at the EDC are experienced in the processing, archiving, and distribution of satellite land remote sensing data. In particular, the EROS facilities and equipment are uniquely suited to the job of cataloging and archiving satellite remote sensing data to assure its preservation in an orderly manner. The Committee expects and encourages the Secretary of Commerce to fully utilize this unique facility and capability for maintaining and preserving the archive of data from land remote sensing satellites.

Consistent with section 602(f), it also is expected that the staff, facilities, and equipment of the EDC will be used to process and distribute satellite remote sensing data following the expiration or relinquishment of a private system operator's archiving right to sell the data, as provided for in subsection (e).

Section 603.—Non-reproduction

Section 603 permits system operators to sell unenhanced data on the condition that the data not be reproduced and disseminated by the purchaser. The Committee recognizes that the commercial viability of land remote sensing will be greatly inhibited if data purchases are free to reproduce and disseminate unenhanced data and if a "black market" exists. However, the Committee also recognizes that potential purchasers may be discouraged by a requirement that data absolutely not be reproduced or disseminated, even for internal use.

Section 603 is intended to permit system operators flexibility concerning limitations on reproduction and dissemination of data provided that the system operators' policies regarding reproduction apply to all purchasers in a nondiscriminatory manner and be published in advance.

Section 604.—Reimbursement for Assistance

Section 604 states that Federal agencies may provide assistance to operators of remote sensing systems as provided in other sections of the bill. In order to ensure fair competition, substantial assistance shall be reimbursed by the operator, except as otherwise provided by law.

The Committee is aware that agencies, particularly NASA, are authorized to exercise discretion in requiring reimbursement for assistance of private space activities. By including the phrase "except as otherwise provided by law," the Committee intends to preserve that discretion. The Committee does expect, however, that

NASA and other agencies will be cognizant of the desirability of fair competition among private remote sensing systems and that agencies will not provide assistance in a manner that favors any entity over another.

Section 605.—Acquisition of Equipment

Section 605 permits the Secretary of Commerce to allow private parties to buy, lease, or otherwise acquire the use of equipment from the Landsat system, provided that such equipment is no longer needed in connection with the Landsat system. This section does not conflict with section 201(c) and the requirement that the United States maintain ownership of the operational Landsat system.

The Committee realizes that contracts pursuant to titles II and III may contain provisions for use of Landsat equipment by the contractor(s). The Committee intends for section 605 to be in addition to, rather than in lieu of, any use of Landsat equipment by any such contractor. The Committee feels that utilization of such equipment by a contractor, particularly under title III, would minimize the cost to the Government of such a contract, and the Committee encourages the Secretary to provide for such utilization. The section is intended to provide the Secretary flexibility and to ensure that equipment from the Landsat system is utilized to the maximum extent possible, and in a manner that promotes commercialization of land remote sensing.

Section 606.—Radio Frequency Allocation

Section 606 establishes procedures and guidelines for the allocation by the FCC of radio frequencies for use by commerical land remote sensing satellite systems.

Subsection (a) requires the FCC to determine within 120 days after the date of enactment of the bill the frequencies to be used by commerical land remote sensing satellite systems and directs the FCC to seek comments from the Department of Commerce in making this determination.

The Committee is aware of the efforts of the FCC and the National Telecommunications and Information Administration (NTIA) to meet this requirement and to allocate sufficient spectrum for land remote sensing satellites. The Committee applauds the efforts of the FCC and NTIA and feels that such coordinated activities shall expedite processing of commercial land remote sensing applications.

Subsection (b) encourages the FCC to award licenses for frequencies within 120 days of the receipt of an application. The FCC is directed, in the event that frequencies are not allocated within 120 days, to inform the applicant of pending issues and of actions required to resolve them.

The Committee recognizes that applicants for radio frequencies will make considerable investments toward development of remote sensing systems while applications for frequencies are pending, as provided by subsection (c) of this section. The Committee, therefore, strongly urges the FCC to allocate frequencies to applicants as rapidly as practicable where such applications are clearly consistent

with subsection (d) of this section and other requirements of the bill. The Committee also expects that the FCC will expeditiously inform applicants of any complications, whether they involve scarcity of spectrum or other concerns, that might delay approval of an application.

Subsection (c) ensures that development and construction of land remote sensing system may proceed while the FCC is in the process of determining frequency allocations for such systems. This shall not prejudice the FCC decision concerning the allocation of frequencies. The Committee is aware of the FCC decision that apart from the radio transmitters and frequencies used for associated communications support, it does not appear that the development or construction of the land remote sensing launch vehicles and launch site(s) requires a construction permit issued by the Commission pursuant to section 319 of the Communications Act of 1934 because they are not "communications" within the meaning of section 1 of that Act. The Committee also is aware of the FCC decision that sensors are not communications facilities, as defined by that Act, and, therefore, a construction permit is not necessary for their procurement. The Committee supports these decisions by the FCC and feels they will accelerate the development of commercial land remote sensing applications.

Subsection (d) states that frequency allocations by the FCC shall be consistent with international obligations and with the national interest. A common theme in the bill is the need to strictly adhere to international obligations and to protect vital national interests. This provision reiterates that policy and instructs the FCC to consult with appropriate Federal agencies in determining whether granting of frequencies to particular applicants is consistent with this subsection and other relevant considerations.

Section 607.—Consultation

Section 607 directs the Secretary of Commerce to consult with appropriate Federal agencies regarding matters relating to the concerns and missions of such agencies.

Subsection (a) directs the Secretary of Commerce to consult with the Secretary of Defense on all matters arising under the bill that relate to national security. The Secretary of Defense is directed to notify the Secretary of Commerce of any national security concerns related to any activities pursuant to the bill.

Subsection (b) directs the Secretary of Commerce to consult with the Secretary of State on all international matters arising under the bill. Similarly, the Secretary of State is directed to notify the Secretary of Commerce of international commitments and obligations relevant to the bill.

Subsection (c) authorizes and encourages agencies to provide remote sensing technology and training to developing nations. The Committee is aware that agencies such as the Agency for International Development and the U.S. Geological Survey have provided technical assistance in remote sensing to developing nations. The Committee supports these activities and expects these and other Federal agencies to continue and to enhance these programs.

Subsection (d) authorizes the Secretary of Commerce to require agencies that impose conditions on private system operators based

on national security or international concerns to reimburse system operators for costs related to such conditions. Reimbursement would not include anticipated profits.

The Committee realizes that private remote sensing system operators may be required to alter their operations due to unanticipated national security or international concerns. Such national security requirements may include limitations on resolution, geographic restrictions, or additional hardening of data requirements. The Committee feels that, in order to protect the commercially viability of private systems, the agencies that impose conditions that require system alterations should be required to reimburse system operators for the direct costs related to these unanticipated alterations, including development costs but excluding anticipated profits. Such policy should insure judicious application of this discretionary authority by these agencies and should work to encourage private entities to invest in land remote sensing ventures.

The Committee strongly urges the Secretary of Commerce to consult with the Secretary of State, the Secretary of Defense, and other appropriate Federal agencies to determine the circumstances under which such a reimbursement would be appropriate and to determine the best method for implementation of such a policy in a uniform manner.

Section 608.—Amendment to the NASA Authorization Act, 1983

Section 608 amends the NASA Authorizationn Act of 1983 (Public Law 97-324) to authorize the Secretary of Commerce to plan and provide for the management and operation of civil remote sensing systems, and to plan for the transfer of the operation of such systems to the private sector when in the national interest.

The Committee notes that the Secretary's authority to operate Landsat expires at the end of fiscal year 1984 pursuant to Public Law 97-324. Section 608 is intended to extend that authority. This section also gives the Secretary the required authority to transfer operation of civil remote sensing systems to the private sector. Pursuant to Public Law 98-166 and Public Law 98-52, meteorological satellite systems may not be transferred to the private sector without prior approval of the Congress.

Changes in Existing Law

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

The National Aeronautics and Space Administration Authorization Act, 1983

Section 201 of that Act

Sec. 201. [(a) The Secretary of Commerce is hereby authorized to plan and provide for the management and operation of civil land remote sensing satellite system, including the LANDSAT D and D' satellites and associated ground system equipment transferred

from the National Aeronautics and Space Administration; to provide for user fees; and to plan for the transfer of the ownership and operation of civil operational land remote sensing satellite systems by the private sector when in the national interest. The provisions of this subsection expire September 30, 1984.]

(a) The Secretary of Commerce is authorized to plan and provide for the management and operation of civil remote sensing satellite systems, which may include the Landsat 4 and 5 satellites and associated ground system equipment transferred from the National Aeronautics and Space Administration; to provide for user fees; and to plan for the transfer of the operation of civil remote sensing satellite systems to the private sector when in the national interest.

(b)–(d) * * *

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